Worksheet 6 Problem solving

Task 1

1. The Jewels of Heuro

This game was written by Dr Michel Wermelinger (Faculty of Mathematics, Computing and Technology) as part of the Open Learn project at the Open University.

Try the game by following the link
http://www.open.edu/openlearn/science-maths-technology/computing-and-ict/computing/the-jewels-heuro

Write down the best route you found in your attempt to find the shortest tour at the end of the game, and the length of the tour.

What strategies did you employ to find the best solution?

2. Go to http://www.hbmeyer.de/backtrack/backtren.htm , which models the performance of a backtracking algorithm. The aim of the algorithm is to find an arrangement of the 9 cards such that each side touches a “matching” card. There is no quick and efficient algorithm to solve this problem.

   Tip: Set it to “automatically”. and use a small delay of about 30ms or you will be watching the backtracking algorithm for a long, long time!

Task 2

1. Look up Google's Privacy Policy at https://www.google.com/policies/privacy/

   What data do they collect about you?

   What use do you think they make of this data?

2. Go to http://www.sorting-algorithms.com/ , which models the performance of different sorting algorithms.

Extension task

Navigate to the web page http://www.mrao.cam.ac.uk/~steve/astrophysics/webpages/barometer_story.htm and read the story.

Were the student's solutions to the problem **correct**?

Were the solutions **efficient**?